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POPULATION, ECOLOGY, AND THE
AMERICAN INDIAN: A NATIVE
AMERICAN CURRICULUM UNIT
FOR MIDDLE AND HIGH SCHOOL

NATAM XII

University of Minnesota

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by

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THE NATIONAL STUDY OF AMERICAN INDIAN EDUCATION

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This is a section of the Final Report of the National Study of American Indian Education, which has been funded by the United States Office of Education.

The work reported here is part of a large University of Minnesota project, which has been financed from several sources.

A Note on the NATAM Curriculum Series

This curriculum unit was prepared by a Minnesota school teacher. The teacher has recently completed a University course (H.Ed. 111) on Indian education offered through the College of Education and the General Extension Division during the Spring Quarter, 1970. The course, greatly strengthened by the active participation of the Indian Upward Bound Program at the University of Minnesota, grows out of an attempt to deal with certain problems noted in the University of Minnesota aspects of the National Study of American Indian Education.

We believe this unit to be of possible value to Minnesota school teachers. We offer it as an example of what one teacher can do, after minimal preparation, toward developing curriculum materials on a "solo" basis for personal classroom use.

Efforts of this kind are obviously not professional in the strictest sense. Yet they do offer Minnesota teachers with some immediately useable materials, written by their colleagues as the latter develop expertise within a new area of personal interest and growing competence. In this sense, the NATAM Curriculum Series offers the chance to provide a needed service and to test a staff development model.

We solicit your comments on any aspect of this series.

The Coordinators

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PURPOSE AND INTENT OF THE UNIT

This study unit is intended to inform of and dramatize to the student, the need for careful planning of population growth in today's world. The first part of the unit is simply an outline of the unit as taught this year in my World Affairs class. The second part, as will be noted, deals exclusively and in more detail with an addition to the unit. This section will attempt to illustrate how the American Indian - a model of successful, pre-white man adjustment - was forced to balance his numbers with his environment.

It is not my intention to go into details of how this information would best be presented to the student. This, I feel, must be the choice of the teacher. The grade level, rapport with the students, community dictates on the frankness of such presentations, and the teacher's own ease of discussing such "controversial subjects"; are all factors which must enter into the decision of how to teach this material.

A survey given to my students at the end of the study is included. The questions illustrate the degree to which we freely discussed those "controversial subjects."

INTRODUCTION

Man survives by exploiting the resources within his environment. Primitive man did not have to be reminded of this fact. He spent nearly every waking hour wresting his food, clothing and shelter from the resources in his environment. In today's technological society, man's dependence on his environment is not nearly as obvious. In fact, modern man often behaves as though he were freed from such dependence. Early man hunted his animals and gathered herbs; if they were not abundant in his environment, he moved or died of starvation. Modern man's supply of animals and plants are found chopped, sliced and packed in plastic and metal containers on supermarket shelves. But this does not make him any less dependent upon animals and plants.

Man has reached a critical stage in his struggle to exploit his environment. On the one hand, his ability to take from the environment - with saw, shovel, pump and a host of other technological devices - is virtually unlimited. On the other hand, man's ability to manage his environmental resources so as to maintain or ration them, is woefully inadequate.

Today we see the human population and its appetite for environmental resources growing at an alarming rate. Much of the responsibility for learning to manage the environment must be assumed by the students of today - the decision makers of tomorrow.

At what stage of human population growth will the environmental resources cease to be sufficient? No biologist doubts that there is a theoretical limit at which the human population can no longer live at the expense of the environment. Neither an alarmist reaction nor an ostrich one are especially helpful in the light of the present emergency. Man must know the problems and the alternatives in correcting the problems. Then and only then can he make the decisions which might very well be the life or death choices of mankind. It is the intention of this study to point out the problem in terms of an emergency situation and then to offer various solutions to the problem of OVER-POPULATION.

OUTLINE OF UNIT
ON THE POPULATION EMERGENCY

I. The Explosion

A. Mathematical illustrations of growth.

1. Figures dealing with world growth.
2. Illustrations of doubling time.

B. Why this growth?

1. Improved medical techniques and knowledge results in more people.
 - a. Death by disease reduced.
 - b. Infant mortality reduced.
 - c. Longer survival by aging persons.
 - d. Improved nutrition.
 - e. Education.
2. Lack of voluntary control of birthrate.
3. Opposition to birth control.

C. Projections for the future if nothing is done.

1. Many excellent examples can be made of what crowding will exist in the lifetime of the student.
2. Scientific projections available in a number of sources.

II. Can we feed ourselves?

A. Food

1. Numbers presently starving.
2. What nations can feed selves.
3. The dwindling U.S. surplus.

B. The food chain or cycle.

1. Calorie loss in today's diets.

C. Technology

1. Better foods through advanced methods of agriculture.
 - a. Fertilization.
 - b. Irrigation.
 - c. Better seeds.
 - d. Improved breeding.
 - e. Pesticides.

2. Farm the sea.
 - a. Utilize improved fishing methods.
 - b. Plankton as a food.
 - c. Seaweed as a food.
3. Ersatz food through:
 - a. Chemicals
 - b. Existing resources like petroleum.

III. Other threats through population (A major section of the study)

A. Pollution of the environment.

1. Air
2. Water **All pollution generally falls into these
3. Land categories.

B. Scientific predictions of pollution's effects.

1. Water shortage.
2. Non-breathable air.
3. Reduced food production.
4. Disposal of wastes.
5. Noise pollution.
6. Economic effects.
7. Taxation to thwart pollution.
8. Possible ice ages or melting of polar ice in the future.
9. Hopeful conquest of the above through technology.

C. International conflict through overcrowding and reduction of resources.

1. Major emphasis on threat to U.S. as prime user of world resources.

IV. Alternatives to Population Control.

A. Better use of technology.

1. Agriculture - see #II.
2. Pollution control.
3. Cities on sea - high rise building on land - new cities.
4. Desalinization of sea water.
5. Space colonization.

- B. Reduction of our standard of living almost assured.
- C. Most eco-scientists debunk the efficacy of alternative programs.

V. Population Control.

A. Known methods.

- 1. Abortion.
 - a. Chemical.
 - b. Mechanical.
- 2. Contraception.
 - a. I.U.D.
 - b. Pills.
 - c. Condom.
 - d. Projections of more simple and effective contraception.
- 3. Rhythm systems -- (not effective)
- 4. Sterilization.
 - a. Vasectomy.
 - b. Tubal ligation.

B. Public and Governmental Pressure

- 1. Reversal of present tax structure.
- 2. Pressure to stop glorification of large family in:
 - a. Advertising.
 - b. Entertainment
- 3. Election of concerned officials.
- 4. Repeal of "blue laws."
- 5. Vastly improved program of sex education.
- 6. Education of people to known methods of birth control.
- 7. Pressure on other countries through hitching foreign aid to efforts at controlling population.

C. Possible Aids.

- 1. Later marriage.
- 2. Women's liberation movement.
- 3. GROWING PUBLIC CONCERN.
 - a. Zero Population Growth and other organizations.

- D. Poor and ignorant are begging for help.
- E. There seems to be a growing feeling in favor of the dangerous practice of selective eugenics.

VI. Opposition to Control.

- A. Catholic Church (thorough and balanced explanations required)
- B. Foreign and some domestic customs.
 - 1. Large families are good.
 - a. Aid in work.
 - b. Sons.
 - c. Old age insurance.
 - 2. Methods of control not understood and sometimes opposed because of aged customs.
- C. Would tamper with the historic role of women.
- D. Fear of present methods.
 - 1. Cancer and the pill.
 - 2. Synthetic hormones used.
 - 3. Some history of sloppy medical practice in prescribing.
- E. Opposition by militants of black, Indian and Mexican-American.
(see Catholic)
- F. Opposition by anti-sex education groups which is directly related to the problem of too many people.

Certainly the preceding outline was very brief and bereft of detail. This is part attributable to the fact that much of the detail comes out as you teach the unit and also because anyone who does teach such a unit has a tremendous amount of well written material to draw upon.

The next couple of pages contain the survey given to my students following the study of the previously outlined unit. I think it shows the deeply felt concern of today's student regarding the problems of population and pollution.

FELLOW STAFF MEMBERS

Attached is a survey which was given to my World Affairs class following a study of population and pollution. Several fellow teachers suggested that all of you might like a copy.

Obviously the sample group is limited and I'm sure an expert could condemn the wording of certain questions. Still, I do find the unanimity of opinion on 22 out of 25 questions indicative of our students' concern with the subjects of our upcoming environmental week.

I hope you find this as interesting as I did.

Ron Raveling

ATTITUDE SURVEY - POPULATION & POLLUTION

SA - Strongly Agree
A - Agree
D - Disagree
SD - Strongly Disagree
NO - No Opinion.

	SA	A	D	SD	NO
1. Timed caution is needed when enforcing anti-pollution laws which could cause other problems such as unemployment, lack of electric power, etc.	0	7	12	6	0
2. The population boom is not a major threat to my way of life for the next several years (under 20).	1	1	7	16	0
3. We have the technological know how to meet the growing threats of pollution & population in the foreseeable future (your lifetime).	3	17	3	2	0
4. I do not intend to conscientiously limit my family except for health purposes despite scare talk by people like Erlich.	0	0	10	15	1
5. The U.S. Gov't. should base, to some degree, our aid to foreign nations on the basis of that nation's attempts and success in controlling population.	13	12	0	1	0
6. Programs designed to bring marriage at a later date in life have more merit than demerits.	3	10	9	2	2
7. Abortion of the fetus before 4th month is not morally repugnant to me.	11	12	1	1	1
8. I think I could agree to much higher taxation if it could lead to cleaner air, water, etc.	8	16	1	1	0
9. Some Virgin areas and wildlife should be maintained even if they stand in the way of progress (as defined today).	21	5	0	0	0
10. I look for real progress (real progress will be made) in the anti-pollution areas in the next 5 years.	2	5	16	2	1
11. Education in the biological and emotional aspects of love and sex <u>MUST</u> be taught by our schools.	14	9	1	1	1

	SA	A	D	SD	NO
12. Contraceptive devices should be made available to those desiring them as a means of controlling population and marriage should not be a criteria for obtaining them.	21	5	0	0	0
13. My parents did an adequate job in educating me with regard to love & sex	1	10	5	9	1
14. I look for a wave of epidemics and famines to sweep over underdeveloped over-populated areas in the next 10 years.	7	17	2	0	0
15. The U.S. Gov't. must enact legislation which, through taxation, will encourage people to limit their families.	9	14	3	0	0
16. I could adopt a minority child and raise it with love and compassion.	8	13	3	0	2
17. Realistic sex education must be extended to younger children so that upon reaching puberty, knowledge would help prevent the unwanted pregnancy.	10	15	1	0	0
18. I feel that it is the duty of every person, particularly Americans, to sacrifice perhaps a major portion of their standard of living in order to prevent disease and starvation in other world areas.	3	6	12	2	3
19. A program of selective eugenics-sterilization and abortion - should be adopted (with the assumption that reasonable limits could be found.)	4	17	3	2	0
20. Realistically we should write off certain areas of the world as being beyond aid and simply stop pouring our money and resources down the rat hole.	2	16	4	3	1
21. Threats of water and food shortages, limited gas for heating, etc. are not realistic, at least in the next 10 years in the U.S.	1	8	14	3	0
22. I could and most likely will join in a peaceful protest against one of the polluters of our environment.	10	15	0	0	1

	SA	A	D	SD	NO
23. The current campaign against pollution has made me more conscious of, and has limited in some way my polluting of the environment.	6	19	1	0	0
24. The aborting of the fertilized egg is morally repugnant to me, except for narrowly defined reasons.	0	2	16	8	0
25. "Why all the talk, we are not going to do anything anyway."	1	4	11	9	1

ADDITION TO THE UNIT

Now that we have learned the basic problems and the possible outcomes of the problem, it should be very beneficial to look at how another civilization adjusted its life style to forestall the situation that faces modern man. It should be recognized that what is to follow was not thoroughly planned, in fact a major role was played by nature, but it must be pointed out that the element of human intent and planning was also very much in evidence.

It has become very fashionable for modern man to point to the American Indian as a model of adjustment to environment. We say the Indian did not pollute, he did not waste, he led a contented life, and he did not overpopulate. A combination of factors tended to make much of this assessment basically true. Why? The major reason was, perhaps, the Indian's limited population. How limited were his numbers? What caused this? Are there parallels of life between modern man and the Indian? The answering of these questions is the major intent of this study.

What happened to the Indian way and what is the Indian position today will be covered in lesser details as the major intent of our study is to show the Indian in pre-white man times.

- I. When and how did Indian ancestors arrive in the Americas?
 - A. Scientific evidence points to approximately 15,000 to 25,000 years ago as the arrival of man in the Americas.
 - B. Scientific evidence points out that the most acceptable version is that man crossed from Siberia into Alaska.
- II. How long did it take for these people to scatter across the two continents?
 - A. Evidence is fairly strong that people occupied most habitable areas of North America, Central and South America, at least 5,000 to 10,000 years ago.

III. Why did certain areas prosper and grow and others remain sparsely populated and "uncivilized"?

- A. Climate and availability of food seem to offer the best explanation.
 - 1. Research has established that the Southeastern section of the U.S., California and the Pacific Northwest were the more heavily populated areas.
 - a. These areas exhibit the more moderate climate and hence longer growing seasons in what is the present U.S.
- B. Research has established that the more populous areas had a more organized society including:
 - 1. Government.
 - 2. Land holding.
 - 3. Permanent agriculture.
 - 4. Permanent or semi-permanent villages or community homes, public building, etc.
- C. The less populated areas show signs of a more nomadic existence predicted on the pursuit of food and consequently a less formally organized society.

IV. What were the natural contrals which acted to restrict Indian population?

- A. Availability of food -- without food people either starved or moved on. Natural disasters such as drought, unusually severe seasons, failure of game supplies all affected the numbers of Indians in a given area.
- B. Disease -- epidemic diseases often ravaged whole tribes. This is especially true after the white man's arrival but research has indicated the presence of certain diseases prior to 1492.
- C. Exposure -- in the more rugged climates even the "wily" Indian was lost in blizzards, dust storms, could not find water holes, cast into the sea, etc.
- D. Infant mortality -- Driver states figures of:
 - 30% died first year,
 - 50% died first two years,
 - 67% died first five years,

as being perhaps the average for North America prior to arrival of white men. Certainly all research shows an infant mortality rate in excess of 50%.

E. Lack of medical knowledge -- we have learned of certain tribal sophistication in drugs and surgical techniques but a general assessment would be that seriously ill or injured died for lack of proper care. This is not to say it was much, if any, better for white people at that time.

V. What human created activities acted as population controls?

A. Wars -- the more competition for food and living space the more war-like the people became if others also tried to live in the same area.

1. Wars were, as today, primarily fought by young men -- potential fathers -- and hence male offspring were held in high esteem but also seemed to be in somewhat shortened supply.

B. Hunting -- hunting of certain animals and in certain environments was a dangerous activity, again almost exclusively a male function.

1. Outstanding examples -- the Buffalo hunts or the arctic hunts of seal, whale, etc.

C. Human sacrifice -- not a widespread activity but one almost exclusively limited to the young, and therefore potential parents.

VI. What deliberate sex practices did the Indian participate in and what morality was evident in their sex lives?

A. Indian cultures indicate a very strong set of taboos and superstitions regarding, particularly, menstruation and childbirth.

1. The menstrual cycle created many customs such as isolation, a form of untouchableness during the period, many beliefs regarding hunting, fishing or war when the wife was menstruating.

2. The birth of a child was a highly female event and often resulted in a form of banishment during and immediately following the birth. Some tribes had very strong taboos regarding intercourse for extended periods after the birth of the child.

3. Indian children were nursed for extended periods, often two or three years, during which time conception was highly improbable.

- B. Homosexuality was evident and apparently accepted.
 - 1. "Berdaches" among the Plains Indians.
 - 2. Natchez Indians.
 - 3. Rejected and punished by Aztec and Incas.
- C. Indian cultures contain many rules pertaining to sexual activities, particularly to women.
 - 1. Often adultery was license for the male to invoke severe penalties on the adulteress. Obviously the famous double standard operated in the Indian culture as well as today.
 - 2. Abstention from intercourse was practiced widely on nights before hunts or war parties. A male who constantly hunted or made war was then rather limited by abstention or absence.
 - 3. Intercourse in certain positions was practiced. Pomo Indians had intercourse on their sides to prevent conception of twins. Very recent studies indicate that positions in intercourse have a definite effect on the chances of conception and the sex of the child when conceived.

VII. What practices seemed to directly affect the birthrate or population of Indian tribes?

- A. Young marriage -- modern science has established that young women -- those not far past their first menstruation are less fertile.
- B. Long periods of nursing (previously discussed).
- C. Abortion was widely practiced. The methods included:
 - 1. Drugs
 - 2. Mechanical means.
 - 3. Strenuous exercise.

Abortion was practiced for a variety of reasons primarily associated with the breaking of taboos.

- D. Deliberate child killing or infanticide.
 - 1. Practiced especially against girl babies by Eskimos as the male hunter was the essential being and females somewhat of a burden.

2. Practiced in nearly every tribal area for various reasons including:

- a. Illegitimate birth.
- b. Death of the mother.
- c. Deformed children which were killed immediately.

E. Paracide.

- 1. Eskimos and Plains Indians often left their elders to die, usually in rather formalized procedures.

F. A program of selective eugenics - imperfect children, wounded and gravely ill people were often killed, with acceptance on the part of the victim and kindness on the part of the killer. This practice was dictated by the need for most all Indians to be contributing members of society.

CONCLUDING NOTES ON POPULATION CONTROL

Records of deliberate population control by Indians are extremely difficult to find. Obviously, a people so inculturated with the notion that past practices were unacceptable were not about to thoroughly discuss these with their conquerors. The lack of a written history plus the fading of old customs has combined to mask practices of the pre-white Indians. Even modern writers have been hesitant to openly discuss such touchy subjects as abortion, contraception and sterilization. I mention this as explanation for the incompleteness of my findings. Certainly people as advanced in surgical techniques as the Aztec and Inca knew of surgical sterilization. It would seem equally obvious that people who directly connected intercourse with pregnancy would invent some form of contraceptive device. No mention of these were found in researching this subject.

VIII. What was the population of Indians at selected periods in history?

- A. Experts generally agree that there were between 800,000 and 1,300,000 Indians living in what is now the U.S. at the time of the arrival of Europeans.

*This would seem to indicate the effectiveness of the various controls on population previously discussed.

- B. In 1900 the number of Indians in the U.S. was placed at approximately 250,000 to 275,000. Responsible for this shocking decline were:

1. White man's diseases.
2. Deliberate killing of thousands of Indians.
3. Forcing of Indians from their home areas into competition with other tribes and hence tribal wars.
4. Death from starvation, exposure, drownings, etc. as Indians were forced to move. (See "Trail of Tears".)
5. Inability or unwillingness to adjust to reservation life.

- C. Today's Indian population exceeds 500,000. Reasons for rebounding population are:

1. A higher standard of living, although miserable by white standards.
2. Older controls of the following are no longer in evidence to a great degree:
 - a. Weather.
 - b. War.
 - c. Customs and taboos.
 - d. Starvation, etc.
3. The Indian lives in poverty, lacks education and modern conveniences. At last we recognize these factors, not immorality, as the causes of the admittedly high birth rate of the modern Indian.

CONCLUSION

Prior to the arrival of Europeans, Indians lived a balanced life with their environment. With the arrival of white men the Indian became the object of a concentrated extermination program. Today the Indian population is rebounding rapidly, in great measure due to the program of assimilation into the white culture. Indians, like all the world's people, are now faced with the problem of overpopulation. How confusing it must be for the Indian; who originally had few problems of this nature; who was forced to accept the idea that his ancient ways were wrong and had to be discarded; and who now must accept the fact that the ideas of population control which they once practiced must be instituted for the survival of man.

How strange it must be to hear of the need to save wildlife, virgin areas, etc. from the very people who rapaciously killed the wild life and despoiled the wilderness. If remnants of previous cultures remain, how sadly ridiculous must seem the tardy white man's concern with his environment. How ironic that we must now turn to learn of population and pollution control from the very savages about whom it was once said, "The only good Indian is a dead Indian."

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*Only those books with applicable information are listed although many volumes were investigated for material apropos to the subject. It was, generally, a time consuming, discouraging and fruitless search.

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